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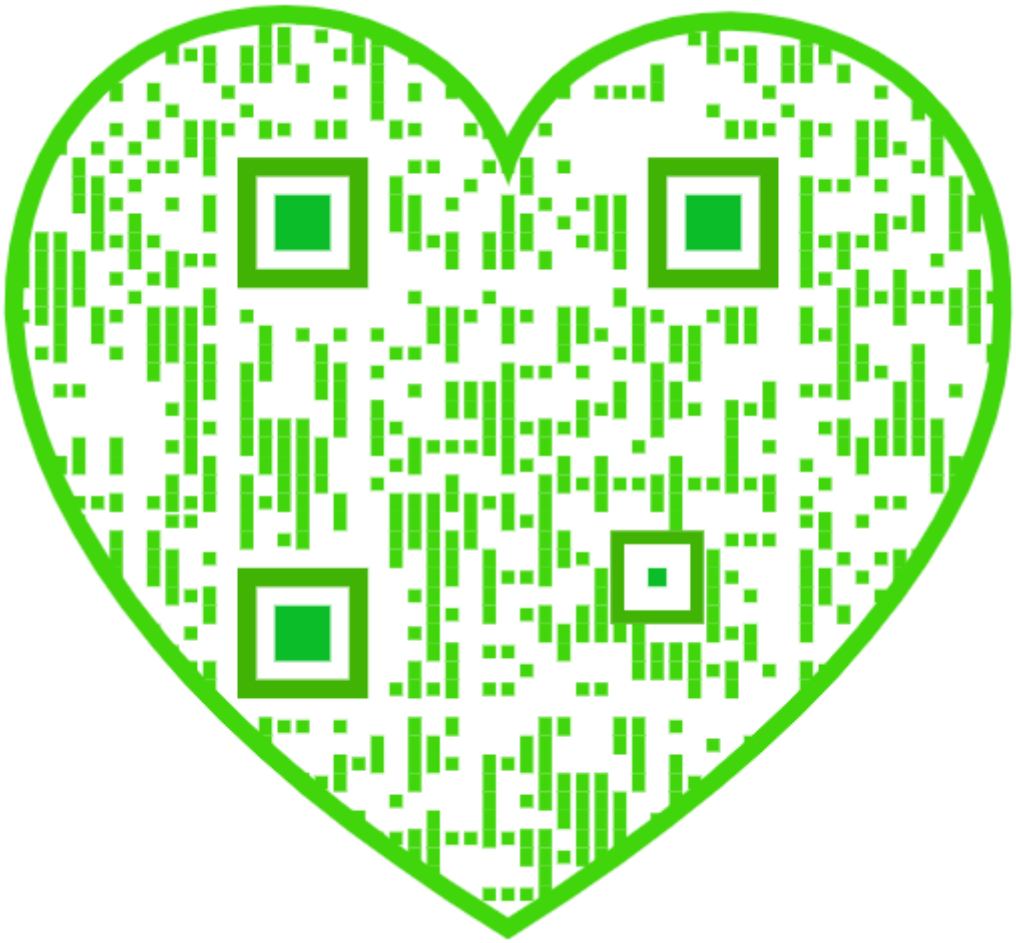

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RED CEDAR, AUSTIN, TEXAS

CEDAR CHESTS

HOW TO MAKE THEM

By

RALPH F. WINDOES

Instructor of Manual Training, Davenport High School, Davenport, Iowa.
Author of "Shop Projects of Wood," "Architectural Drawing
for Secondary Schools," "Drafting Instruments
and How to Use Them," Etc.

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PREFACE

BELIEVING that the popularity of the cedar chest as a cabinet making project has reached considerable proportions, the author has endeavored to embody under one cover all information necessary to the design and construction of a variety of chests. In addition to this mechanical aspect of the work, he has presented some information of educational character on red cedar as a wood, and something of interest concerning the development of the chest.

As information of this character has been lacking in the past, he hopes that the book will meet with the approval of teachers who will use it in their work.

Acknowledgment is due to the Forest Service for the use of the illustrations in Chapter I, to two of the author's students, Otto J. Teegen and James A. Kelly, for the great assistance rendered by them in the preparation of the drawings, and to the Metropolitan Museum of Art, New York City, for permission to reproduce photographs of historic chests in its collections.

RALPH F. WINDOES.

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CHAPTER I

Red Cedar

The botanical name for red cedar suitable for chest construction is *Juniperus virginiana,* or *Southern Juniper,* as it is familiarly known. Commercially, it is sold as "Tennessee Red Cedar." There are other cedar woods but none of them should be used in chests if the great advantages of cedar are to be derived. Southern Juniper may aptly be called the "wood imperishable," since, under ordinary conditions, it will never decay. Placed as shingles with copper nails, there is little doubt but that it will last for ages, or until the attacks of rain and wind have weathered it away. Until recent years one of its greatest uses has been in telegraph poles, fence posts, greenhouses, etc., where constant contact with damp earth would soon rot away a less durable wood. Now, since the rapid rise in the value of red cedar has almost prohibited this use, cypress, "the wood eternal," has largely succeeded it.

LOG HOUSES OF RED CEDAR

When America was settled, one of its most valued natural resources was found in the red cedar belt of the South. Settlers migrating to this region found the straight cedar logs perfectly suited to cabin construction, consequently the best trees were felled and utilized in the building of America's first homes. As time went on and the settlers prospered, the logs were taken from the houses, and assembled into barns, frame construction taking their place in the homes. Today, these old logs, perfectly preserved, are purchased by lumber men, as some of the most select red cedar lumber is manufactured from them. A great many of these old logs have been cut up into lead pencil slabs, as cedar is the best wood that has ever been found for lead pencils. It is straight grained and easily cut with a knife—the two necessary characteristics. Another source for pencil supply has been found in the rail fences, so common in the South, practically all of which were constructed of split cedar rails. This wood is so highly prized by pencil makers that many fences have been bought up at such prices that modern fences have taken their places, leaving a comfortable profit for the owner.

WHERE RED CEDAR ABOUNDS

The geographical range of red cedar is very wide and hard to define. Roughly speaking, it can be found westward to Minnesota, south to

Florida, and southwest thru Texas. The finest forests were originally found in middle Tennessee, in Davidson, Rutherford, Bedford, Marshall, and Warren counties, with a considerable quantity in the breaks of the Cumberland plateau and in Eastern Tennessee. There was considerable red cedar also in Southern Virginia, North Alabama and in Georgia, while some is found in Arkansas in the Ozark Mountains.

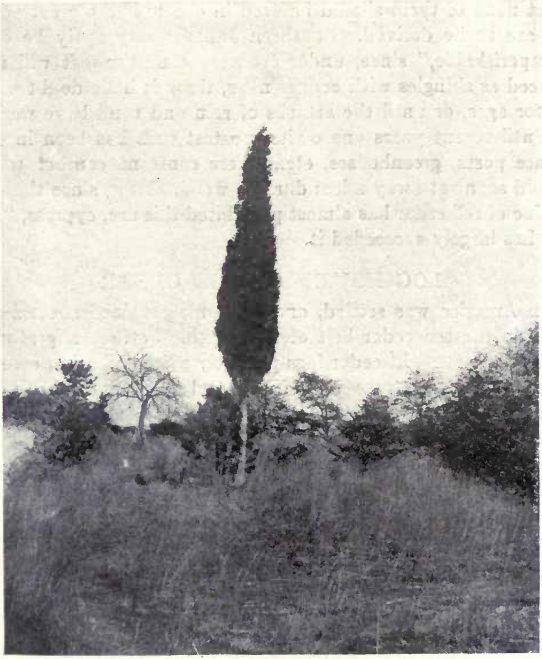


Fig. 1. Red Cedar and Loblolly Pine; Occasional Scrub Pine in the Background. Southern Maryland

These belts are still the most reliable source of supply, some of them having been cut over a great many times. Second growth, altho it is stunted, more knotty, and contains more sapwood than first growth, finds a market in fence posts and a very little in furniture construction.

DEPLETION OF THE CEDAR SUPPLY

The supply of Southern Juniper in this country, both first and second growth, is rapidly being depleted. There is no reason why this condition should exist. The early settlers, anxious to clear their lands, destroyed it ruthlessly, it is true, yet it lends itself so readily to reforestation that it is difficult to surmise why steps to maintain its constant supply were not taken along ago. About two hundred years ago, a Swedish naturalist, Peter Kalm, after traveling over the settled portion of the country, wrote at some length upon the splendid qualities of red cedar, and prophesied its early extinction unless steps were taken to replenish the supply.

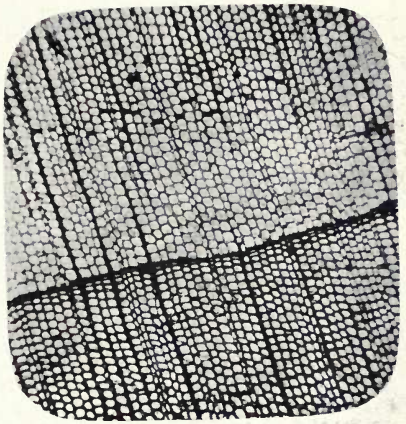


Fig. 2. Red Cedar. Longitudinal Section, Magnified 76 times

In Poor Richard's Almanac for 1749, Benjamin Franklin urged the people to plant and foster the growth of red cedar. He was of the opinion that the rapid clearing of the land, the constant need of wood for fuel would soon destroy the slow-growing oaks and other hardwoods, and that "it would be to our advantage to endeavor to raise some other kind of timber that will grow faster or come sooner.

"The red cedar (a species of juniper) I take to be the most profitable tree for fencing and several other uses that we can raise in our country, considering how easily it may be raised from seed, its readiness to grow on most kinds of soil, its quick growth, the profits it will afford while it is arriving at maturity, and the long duration of the wood when grown to a proper size for the materials we want for our several occasions in husbandry and building. I know of no other tree that will grow so well on such different soils as this will, for upon our sandy beaches, which are nothing but beds of sand, they grow as thick as possible, from whence many thousand posts for fencing are brought into Pennsylvania and York governments, and I have seen, in a great many swamps upon a branch of the

Susquehannah, great trees growing, near 18 inches diameter, 70 feet high, and very straight. And the inhabitants near the mountains, upon Hudson Bay, make a great use of them for making large hovels or barracks to put their corn in before it is threshed. They will grow well in high gravely or clay soil, in rich or poor, or even upon a rock, if there be but half a foot

Fig. 3. Fifty Year Old Cedar, Job's Swamp, Ocean County, New Jersey

of land or earth upon it. It is much to be valued for its quick growth from seed, the little sap and much durable heart, which is acquired sooner than any tree that we can raise on common land. Indeed, the mulberry and locust are of quick growth in very rich land, but not upon poor."

That the predictions of Kalm and Franklin have been substantiated is a well known fact since the cedar of commercial size grown in the Eastern and New England States—of which they spoke—has long since been ex-

Fig. 4. Mature Cedar Brake Along Road. No Underbrush, but the Young Cedar Seedlings Fill all Gaps. Marble Falls, Burnet County, Texas

hausted. Neither knew of the extensive cedar growths in the South and West, yet the original growth of these regions is very near exhaustion.

Luckily, our efficient Forest Service is at this time doing everything in its power to encourage reforestation of the cedar tracts, and the future of the red cedar tree looks more promising than the present.

CHARACTERISTICS OF RED CEDAR

As has been intimated, red cedar is a very durable wood. It is also light, straight grained, does not warp readily, will dry out rapidly, takes a beautiful finish, and has a most pleasant aroma, but one which is moth and insect repelling. Moths shun the red cedar, as other insects shun the pennyroyal herb.

These favorable characteristics all combine to make red cedar the ideal wood for chest construction. Chests must be light, yet strong; good to look upon when finished; of such flat stock that the finish on one side alone will not cause the wood to warp; and they must be moth proof. Southern Juniper furnishes all of these desirable points, and in addition its pleasant aroma permits the immediate wearing of apparel taken from the cedar chest without airing, as must be done with garments protected by moth balls.

Small Carved Wood Chest of Venetian Make (Sixteenth Century)

CHAPTER II

Cedar Chests

The chest, or coffer, has had a varied existence. Its present popularity was preceded by a period in which new chests were a rarity. Previous to this time—taking us back to our great-grandmothers' days—the chest, in the form of the "dower chest," was the proud possession of every girl with visions. Why its popularity suffered is hard to surmise, unless it was relegated as being "old-fashioned," and, therefore, obsolete. In recent years those in society who make things fashionable have restored it to its place of usefulness and beauty, and today there are very few girls whose possessions do not include a chest.

OLD ITALIAN CHESTS

Long before the era of convenient furniture, chests, or coffers, were the one article of utility in every home. In them was kept clothing, valuables of every description, and even food-stuffs.

In early days, these chests were crude, ugly affairs, made for utility alone. Later, especially in Italy, they developed into articles of beauty.

This development reached its height at the time of the Renaissance when the greatest artists of the day took up the decorating of them. Carving and painting, furnished to the wealthy at great expense, produced articles whose magnificence is astounding. These beautiful chests were usually presented to Italian "brides-to-be," who kept their dowery of rich velvets, magnificent brocade, and other treasures of maidenhood safely under their covers.

With the ever-changing ideas of humanity, the beautiful chest lost its popularity, and some wonderful specimens of Renaissance artistry were relegated to the scrap heap. A few were saved—perhaps for the associations they suggested—eventually to be prized and handed down from generation to generation, preserved in the national museums, or homes where wealth permits the collection of old furniture.

NEW ENGLAND CHESTS

In quaint old New England, the seventeenth century bride considered her future happiness to depend largely upon the contents of her "dower chest." Every maid had one—sometimes more than one—in which she assiduously collected her trousseau—her beautiful handmade linens, her

gorgeous silks and satins, preparatory to the day of her ascension into home-making.

Nothing, perhaps, in her interesting life could she recall, in later days, as vividly as her old dower chest, and nothing, perhaps, did she prize as highly.

In those days few chests were made of cedar—oak being the wood preferred. Using the chest, as did the old-time bride, merely to assemble her trousseau, its storage properties were not considered as they are today.

PRESENT DAY DEVELOPMENT

Why the chest lost its popularity is hard to determine. It may be that moths, developing in the oak chest and devouring its contents, were a determining factor, or it may be simply a passing whim of society that relegated the chest. When red cedar came into favor as the universal chest material, repelling moths and other insects, and permitting of most beautiful finishes, the chest returned to its own.

The present-day mother—the far-sighted mother—is instilling the dower chest notion into the hearts of her children as did her great-grandmother years ago. It is not a sentimental whim which prompts her to do this, it is strictly a utilitarian one.

Girls, the majority at least, will some day marry. If they have a chest they will sew and save to fill it, if not, they may come to the altar unprepared, or purchase at one time those things that their own labor and years of association should endear to them. Even if they never marry, bachelor girls must clothe themselves, and some even fit up small apartments in which to live, hence this saving will not be a loss.

Cedar chests may be purchased ready made, of course, but their rather high price prohibits their possession by some. Manual training students or home craftsmen will find in the chest a most attractive project of construction, and one made by a boy as a present to an older sister will give the chest, in her sight, an added charm.

CHAPTER III

How to Build a Simple Chest

It is naturally assumed that the builder of a cedar chest knows the fundamental tool processes, as a project of this kind is no task for an absolute beginner to attempt, hence but little attention will be paid to processes that would ordinarily be known by the graduate of a grammar school.

THE MILL BILL

Chest Design Number 1, illustrated in perspective in Fig. 5, and whose working drawing appears in Fig. 6, is of very simple construction.

Its stock can be purchased glued-up and sandpapered, coming to the builder as in Fig. 7, almost ready to assemble, or the boards can be secured surfaced on two sides, to be jointed, doweled, and finished by hand. Both methods will be considered in this chapter.

The stock list, if the wood is to be glued-up and sandpapered at the mill, should comprise the following pieces:

2 pcs. red cedar for sides $\frac{3}{4}''$x18$\frac{1}{2}''$x38″
2 pcs. red cedar for ends $\frac{3}{4}''$x18$\frac{1}{2}''$x19″
2 pcs. red cedar for top and bottom $\frac{3}{4}''$x20$\frac{1}{2}''$x40″
1 pc. red cedar for feet $\frac{3}{4}''$x2$\frac{1}{2}''$x60″
3 pcs. red cedar for inside strips $\frac{3}{4}''$x$\frac{3}{4}''$x36″
4 pcs. red cedar for inside corners 1$\frac{3}{4}''$x1$\frac{3}{4}''$x18″
1 pc. red cedar for handles 1$\frac{1}{2}''$x2″x12$\frac{1}{4}''$

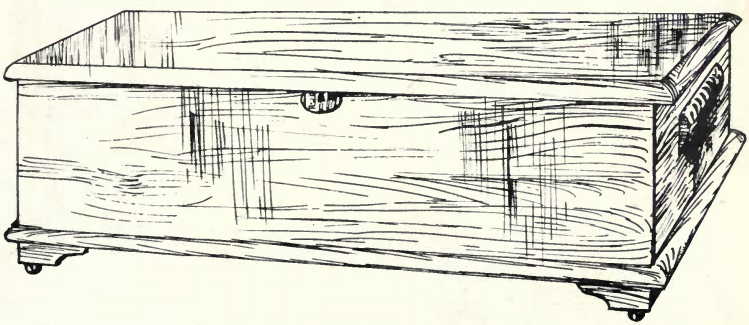


Fig. 5

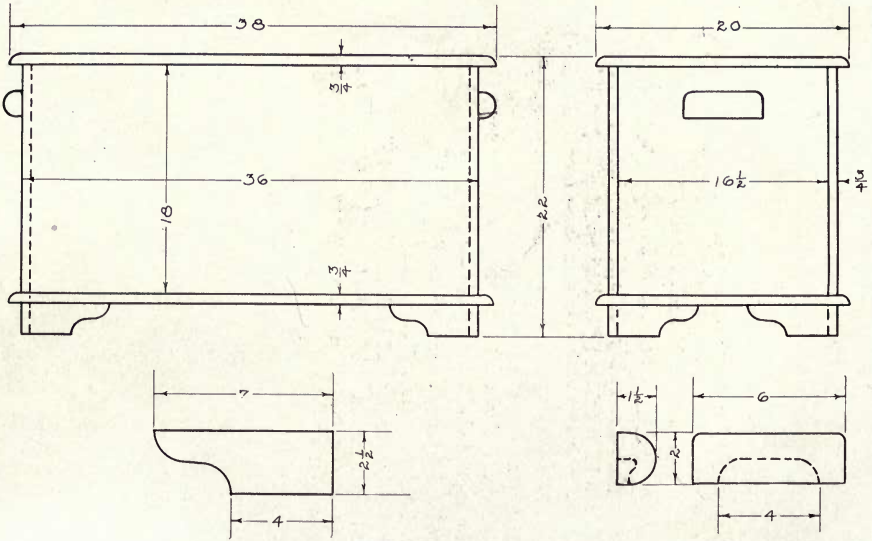

CEDAR CHEST DESIGN NO. 1
38
20
3/4
36
18
22
16 1/2
3/4
7
2 1/2
4
1 1/2
6
2
4
DETAIL OF FOOT
DETAIL OF HANDLE

Fig. 6

An exact checking of the mill bill and the working drawing will show that an allowance has been made in some instances that will need to be cut to fit by the builder. For example, the sides are $\frac{1}{2}''$ wider and about $2''$ longer than the working drawing calls for. This allowance has been made so that the craftsman can secure exact dimensions with perfectly square ends.

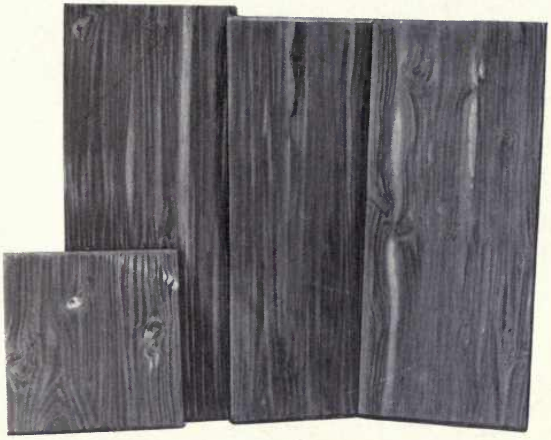


Fig. 7

As surfaced and machine sanded stock is specified, all that remains for the builder to do is to square up the ends and edges, cut the feet and handles, and assemble.

SIDES AND ENDS

Plane one edge of each side and end perfectly straight and square with the surfaces. Check these for "working edges." Measure over $18''$ and with a straight-edge, mark the width on each. Plane carefully to this line, keeping the edges square across.

With the steel square, holding the blade against the working edges in each case, square lines across one end of each piece about $\frac{3}{4}''$.

Saw about $\frac{1}{8}''$ outside of these lines and plane down to them, testing constantly with the try-square across the end grain and the steel square, the blade of which is held against the working edge. When perfectly straight

and square, measure down 36″ on the sides and 16½″ on the ends, square lines across, and repeat the sawing and planing.

TOP AND BOTTOM

The top and bottom pieces are squared up in exactly the same way, but they finish 20″x38″. The upper surfaces of each have their edges and ends carefully rounded, using a radius of ¾″. This is accomplished by planing and sandpapering with a rather coarse and then a fine sandpaper.

These parts are now ready to assemble, but this will not be discussed until the hand finishing of stock is described.

JOINTING AND GLUING WIDE STOCK

If stock that has been machine surfaced on two sides is purchased for the chest, the builder doing his own gluing, the following stock will be needed:

30 board feet red cedar, surfaced two sides to ⅞″
1 pc. red cedar for inside corners 1¾″x1¾″x72″
1 pc. red cedar for handles 1½″x2″x12¼″

SAWING UP THE STOCK

The stock will come in pieces from 4″ to 10″ wide and from 8 ft. to 12 ft. long. Place the strips side by side on the saw horses, and work combinations whereby the greatest saving of stock will be effected. There should be about 2″ allowed for jointing and squaring, making the sides and ends, rough, 20″, and the top and bottom 22″. Saw off the lengths,

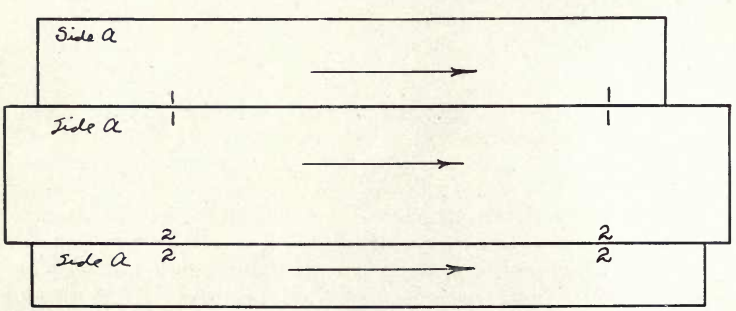


Fig. 8

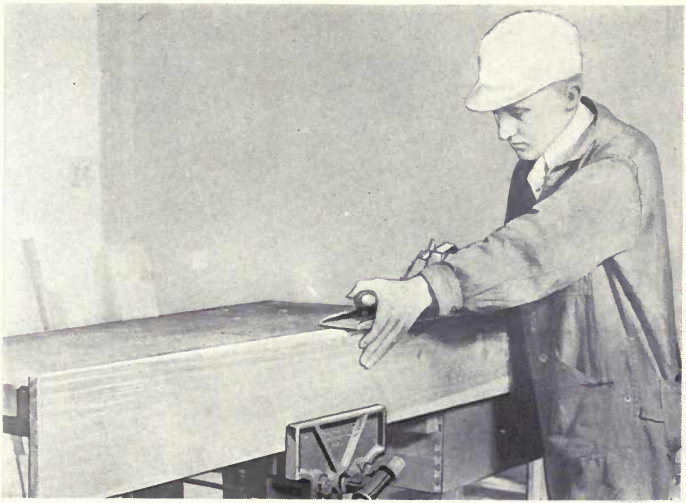


Fig. 9

allowing about 2″ over-length in each case. Save the sawed-off ends, if they are 7″ or over in length, for the feet.

JOINTING

Mark each piece "Side A," "Side B," "End A," "End B," etc., so that they will not become mixed. Begin with one side, putting all other stock away.

Determine by a plane stroke or two which way the grain runs in each piece, and mark this direction by means of arrows, as in Fig. 8. Also, number the adjacent edges.

Assuming the position of Fig. 9, carefully run the jointer plane over all edges that come together. Hold it *down on the knob*, when *starting a cut*, and *hard on the handle* when *finishing*. Keep the sides of the plane *parallel* to the sides of the board being planed.

A few strokes should make the edge perfectly straight with the grain, when it should be tested with the try-square to be certain that it is square with the surfaces.

When it is straight as to length and square across, lay it aside and place the edge it is to join with in the vise. Do exactly the same with this edge, and test it by placing the edge formerly planed down on top of it, Fig. 10. Sighting toward the light will show whether or not exact work has been accomplished. High spots will be easily detected and planed off.

If there is a *long, thin* opening in the center of the two edges, it may be left, as the clamps will close it and when the wood dries out, end-opening

Fig. 10

of joints will be prevented. But this opening *must not be more than* 1-64″ as the clamps might not pull it down and hold it if it were greater.

Repeat with the other edges, and when all boards for one side have been joined, place them into position and test with the steel square, as in Fig. 11. If they do not combine to form a straight surface, those edges that are not square across grain must be planed.

DOWELING

Altho stock jointed and glued up at the mill is not doweled, stock hand jointed must be. Use $\frac{3}{8}$″ dowel pins, placed about 8″ apart, the end pins starting about 3″ from the ends of the boards.

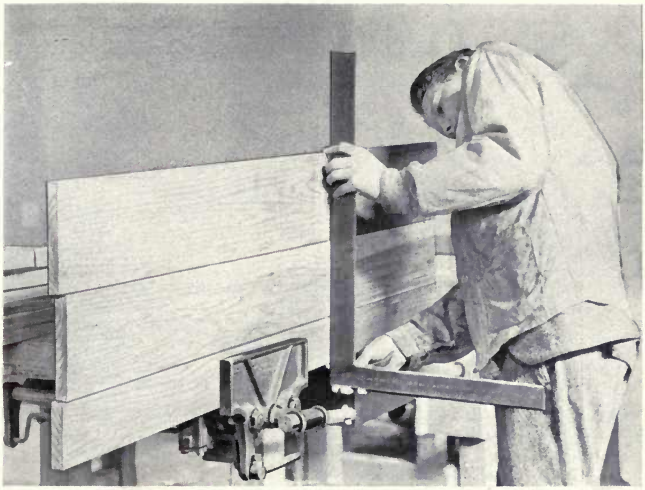


Fig. 11

To lay out the dowel holes, place the edges that are to be joined back to back in the vise. With a sharp knife and the try-square, square lines across the grain. Mark intersecting lines with the grain with the marking gauge, running the spur in the exact center of the edges.

At the intersections of the gauge and knife lines, bore $\frac{3}{8}''$ holes about 1″ deep in both boards, Fig. 12. Slightly countersink these holes.

Cut the dowel pins about $1\frac{1}{8}''$ long, point their ends a little, and cut a shallow groove along the edge to allow the surplus glue to escape, and thus prevent splitting the boards.

GLUING

Place the boards in position on the saw horses near the glue pot. Have the glue heated—if hot glue is used—and all clamps in position at hand. Remember that you can not stop to look for anything when the hot glue is once applied.

Pieces this narrow will have little tendency to buckle, especially if the bar clamps are put on opposite sides, but it may be wise to have four hand screws ready with battens cut the correct length in case they do.

Dip the dowels, one at a time, in the glue and drive in place along one edge of each board. Quickly tip this edge and its mate up, and apply a thin layer of glue to each. Drop them into position and drive them together. Repeat with the other edges, and place the bar clamps in position, as Fig. 13 illustrates. Tighten the clamps until all the surplus glue is squeezed out, and apply the hand screws if the boards show any tendency to buckle.

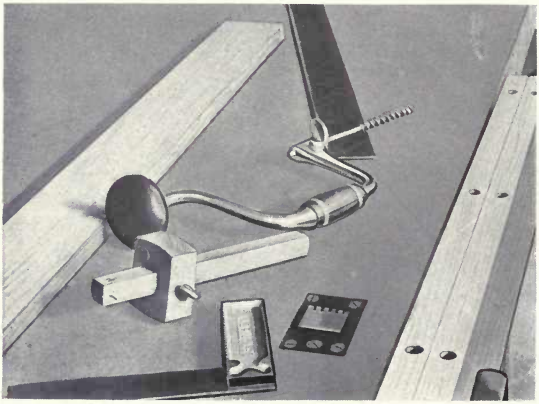


Fig. 12

It is well to warm the boards slightly if hot glue is used.

In case cold glue is used, allow it to stand ten or fifteen minutes before applying the clamps. It will stick better.

SURFACING

After all six wide pieces have been glued up in the above manner and allowed to dry over night, the clamps are removed and the surfaces smoothed up.

Scrape off as much glue that has dried on the surfaces as possible, as hard glue will dull the plane bit.

Begin with a very sharp jack plane, and plane the surface down smooth. Cross-planing is allowable on red cedar on account of the knots, but be very careful not to rip up deep grooves. When planed as nearly flat as

possible, scrape with a sharp cabinet scraper. This should not be held in the hand, but should be used in a scraper plane. Scraping should remove all rough spots from the wood.

Finally, sandpaper the entire surface with No. $1\frac{1}{2}$ sandpaper, and finish with No. 0.

SQUARING UP

Cut these pieces to dimensions and square them up as has already been described for the mill-glued stock. Pieces that have been ripped from the edges should be saved.

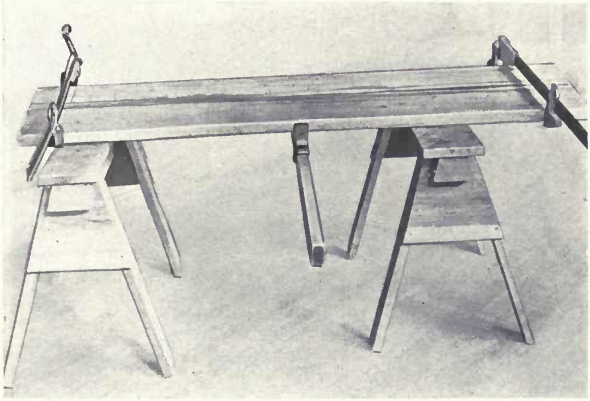


Fig. 13

ASSEMBLING

Fig. 14 illustrates various joints used in chest construction. With the simple design taken as our model in this chapter, we will employ the plain butt, nailing the pieces together with 8d finishing nails.

It will be noticed from the working drawing that the sides are nailed onto the ends. To prevent splitting, a number of small holes should first be drilled thru the sides. Apply glue to the ends before driving the nails in place.

When the sides and ends have been assembled, cut a stick the length

JOINTS USED IN CHEST CONSTRUCTION

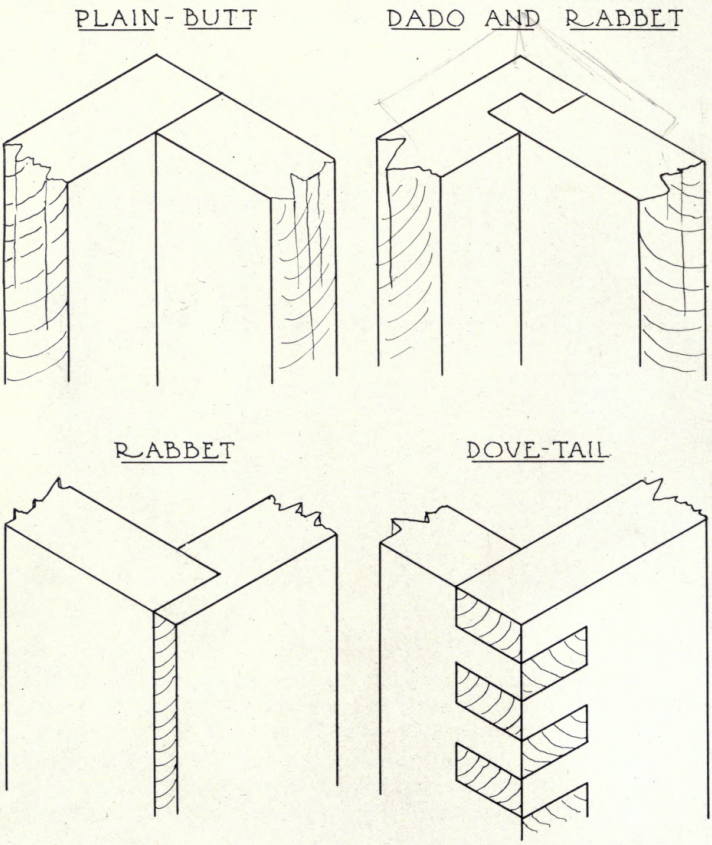


Fig. 14

of one diagonal of the box, and use this to test on the other diagonal. If the box is square, both diagonals will be the same length.

Place the bottom side up and screw the bottom to the sides and ends. Use $1\frac{3}{4}''$ No. 8 flat head screws well countersunk. Bore the holes thru the bottom rather large to allow for any expansion or contraction, and use about twelve screws.

TRIANGULAR CORNER STRIPS

In the inside corners of the box, triangular strips should be securely glued. They are made by ripping on the diagonal of the $1\frac{3}{4}''$ square pieces, and should be made 17″ long, Fig. 15. They help to strengthen the chest.

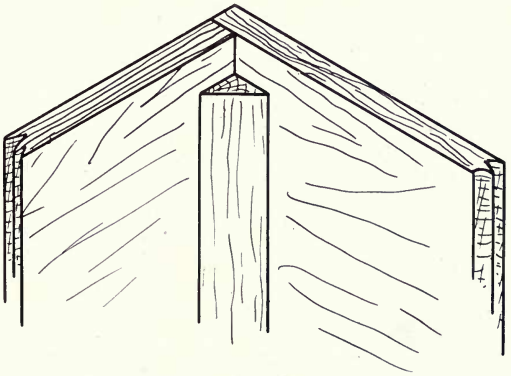


Fig. 15

FEET

The working drawing gives a detail of the feet. Two pieces 7″ long and $2\frac{1}{2}''$ wide are cut to shape as shown. Their adjoining ends are mitered, glued, and nailed. On the inside corner a block $1\frac{3}{4}''$ square is glued to help strengthen the joint and to carry the caster. These feet are screwed onto the bottom piece.

HANDLES

Handles may be purchased, but they are so easily made that they are not worth the expense involved. The working drawing gives a detail of a good shape, but this is only a suggestion. The inside is gouged out for a finger hold.

The handles are attached with flat head screws from the inside of the box, and glued.

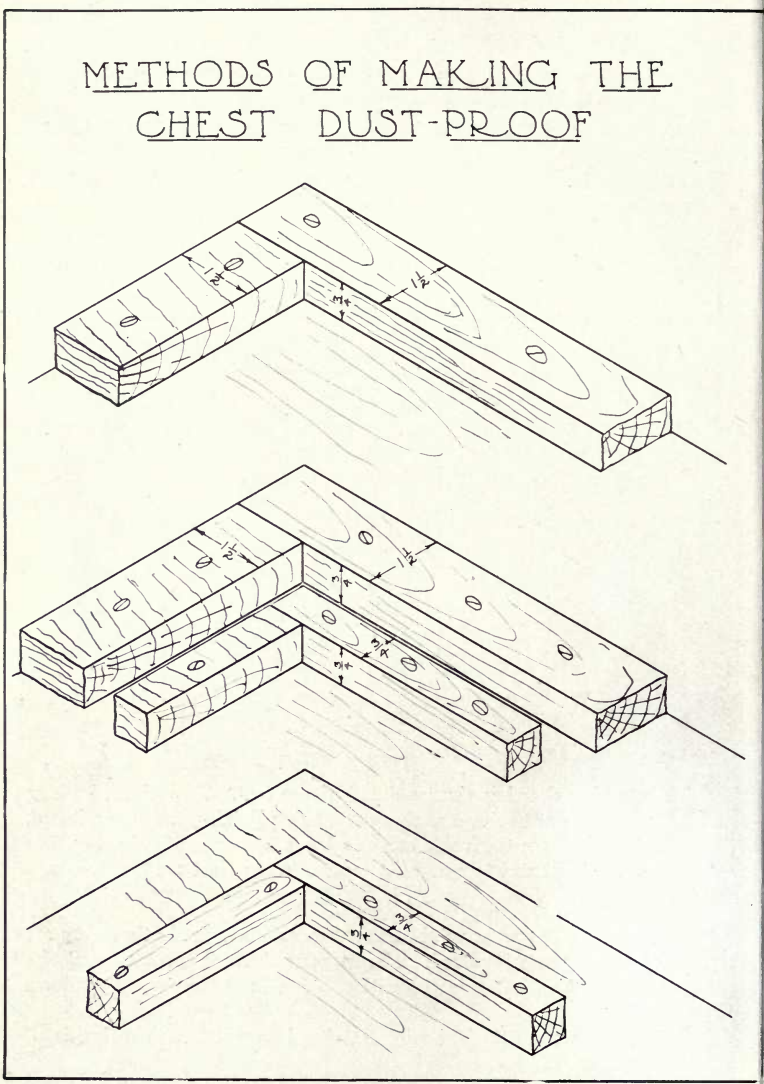


Fig. 16

THE COVER

A good chest is dust-proof. There are three ways of rendering it so illustrated in Fig. 16. The first has false edges glued around the under edges of the top, this false edge extending down over the sides and ends. The third has a strip fastened to the top inside of the edges and ends, while the second is a combination of the other two.

In our example, the third method will be employed.

Cut two strips $34\frac{1}{2}''$ long from stock $\frac{3}{4}''$ square, and two pieces $15''$ long. Screw and glue them in place.

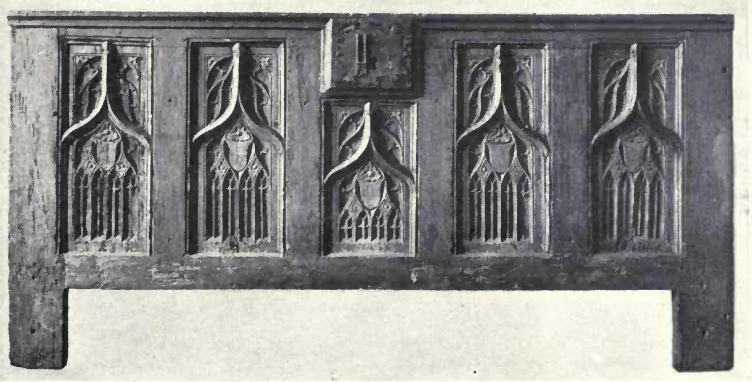
HINGING

Two plain butt hinges $2\frac{1}{2}''$ long with a $\frac{3}{4}''$ leaf will do on this chest. They may be let into both the top and the upper edge of the side piece, or entirely into the edge. Another method often used in schools is that of placing the hinges on the outside of the back and the under side of the top. This is the most simple as it involves no chiseling, and, since the chest is usually placed against a wall, does not look bad, especially if an ornamental hinge is used.

Two chains or desk supports should be used to prevent the lid from swinging way back and straining the hinges. See Fig. 52, Chapter VII.

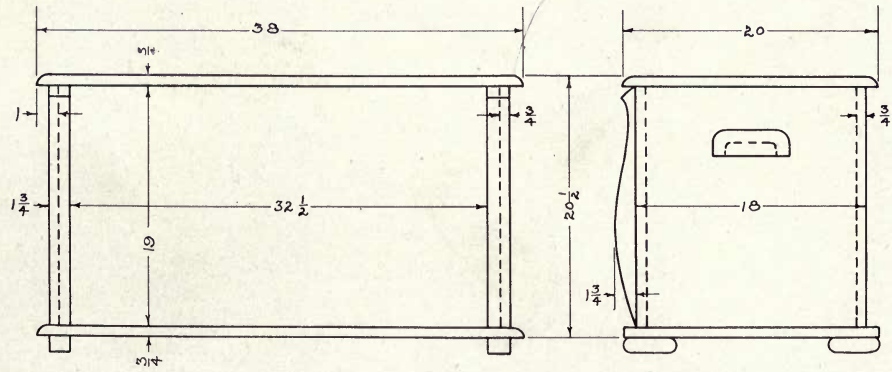
FINISHING

Directions for finishing and preparing the wood for finish are given in Chapter V. Of course the nails should be well set and filled as explained.

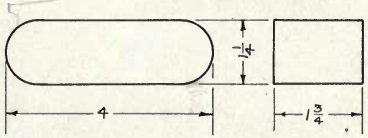


A French Chest of the Late XV Century (Gothic Period)

CEDAR CHEST DESIGN NO 2



DETAIL OF FOOT



CHAPTER IV

Cedar Chest Designs

Variety in design is so essential in cabinet making classes that a number of different styles of chests are presented in this chapter. Altho a great many teachers follow the practice of giving the student a working drawing to follow, it is recommended that the designs herewith presented be used only as models—that from them each boy will combine, and add his own ideas to evolve what may be called "an original design." Only by so doing will the student derive his greatest benefit from the work.

DESIGN NO. 2

In Fig. 18 is presented a perspective of the chest whose working drawing is given in Fig. 17. This chest is very similar to Design No. 1 described in the previous chapter. Its dimensions are practically the same, but in this case, the ends are fastened to the sides, and the end grain—appearing on the front—is covered by a curved piece of cedar $1\frac{3}{4}''$ wide. The feet also differ as the detail shows.

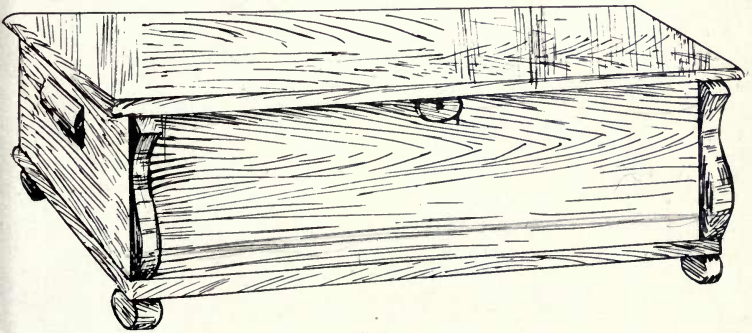
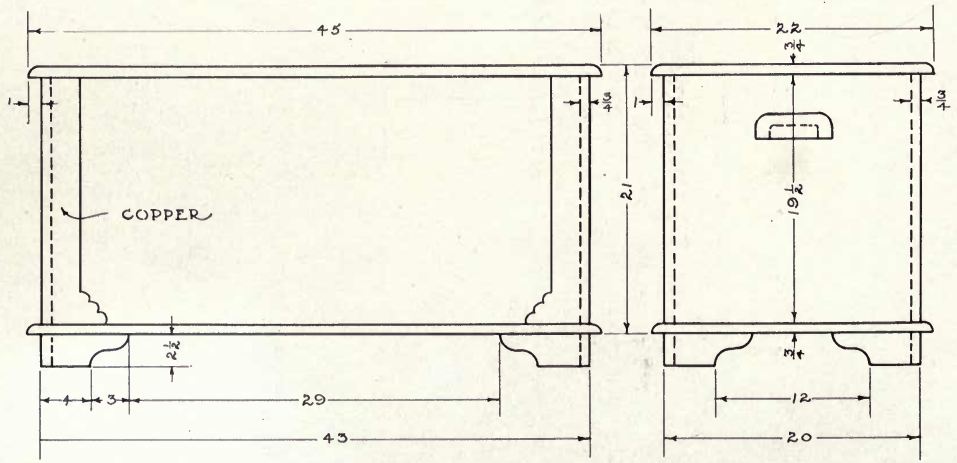


Fig. 18

CEDAR CHEST DESIGN NO 3



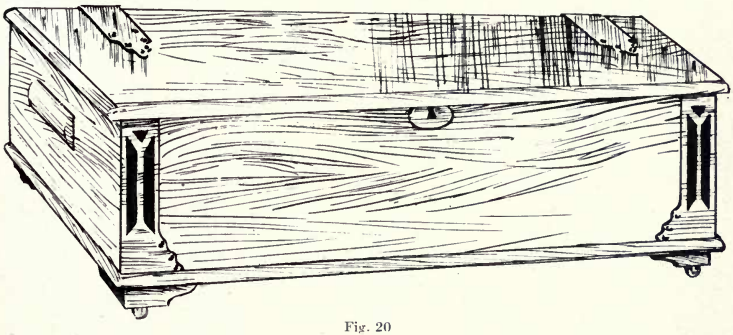
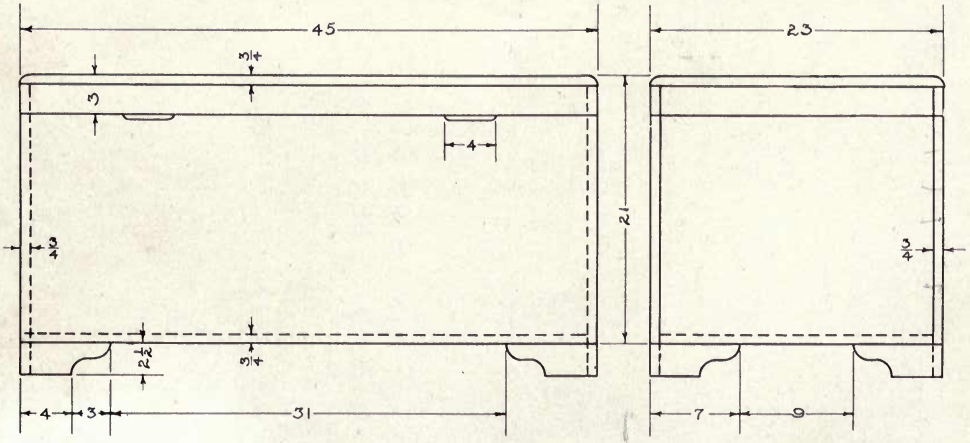


Fig. 20

DESIGN NO. 3

In this design we have a larger chest than the previous, but whose construction is the same. The end grain, appearing on the front, is covered with strips of copper. These may be put on as corners extending over the ends also, or merely as plates on the front, as Fig. 20 illustrates. The feet are detailed with Design No. 1.

CEDAR CHEST DESIGN NO 4



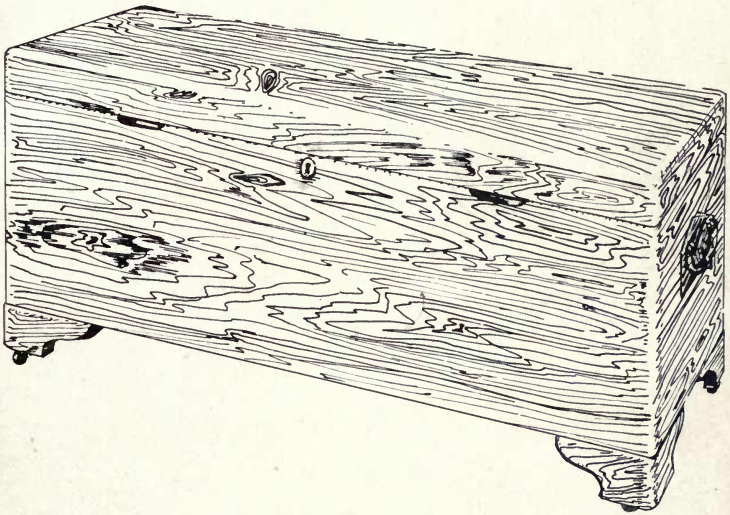
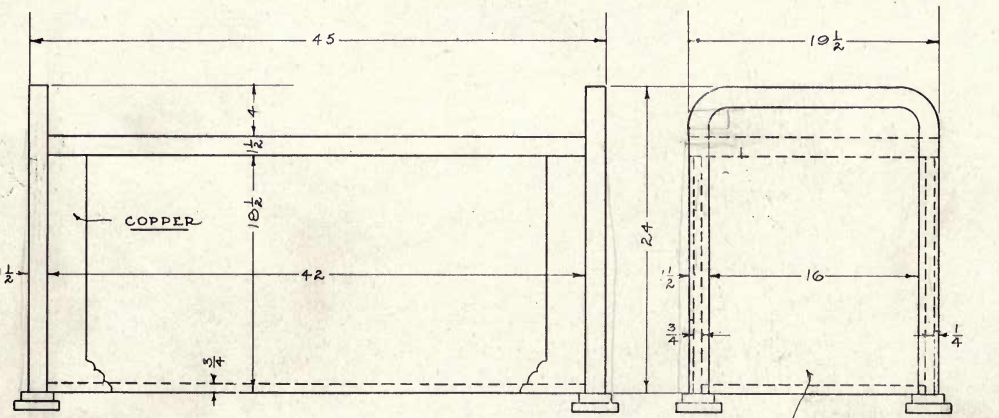


Fig. 22

DESIGN NO. 4

One of the most popular chest designs is illustrated in Fig. 21. In this, the edges are rounded, giving it an easy, graceful appearance. It requires careful, accurate work, as the joints can not be covered with strips or copper as with the previous styles.

CEDAR CHEST DESIGN NO 5



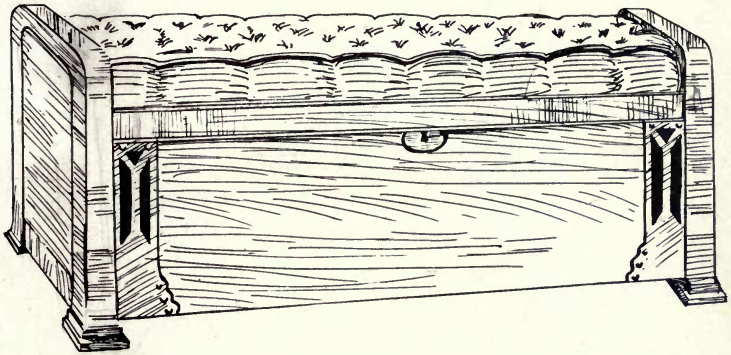
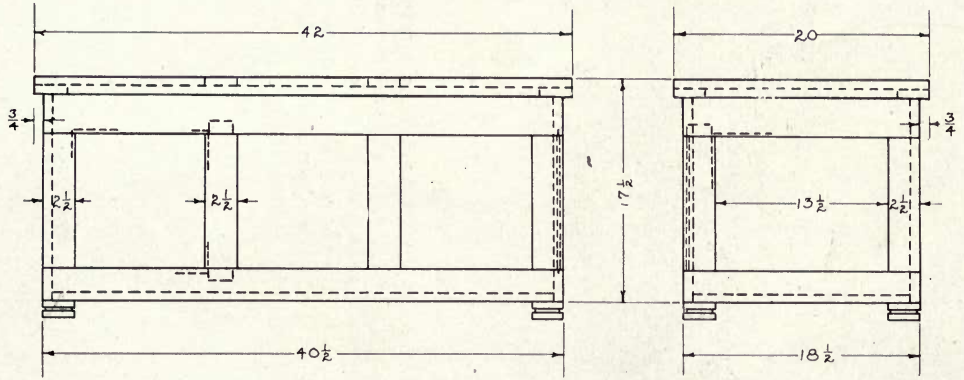


Fig. 24

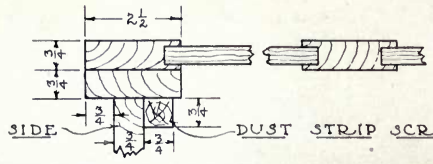
DESIGN NO. 5

In Fig. 24 is shown a chest whose design permits it to be used as a window seat when covered with a cushion. Its appearance is very attractive as it has heavy, massive ends, giving it an air of solidity. The ends can be built up flush, as the drawing, Fig. 23, illustrates, or paneled. A $\frac{3}{4}$″ strip is glued to the front edge of the top, making it appear to be as thick as the ends. The drawings illustrate copper plates on the front, but, if good work is accomplished, these may well be omitted.

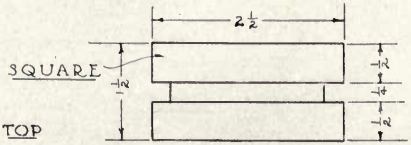
CEDAR CHEST DESIGN NO 6



SECTION OF TOP



DETAIL OF FOOT



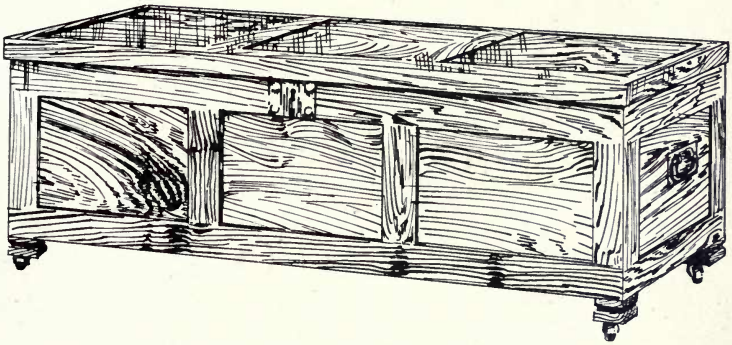


Fig. 26

DESIGN NO. 6

A paneled chest, Figs. 25 and 26, looks well when accurate work has been done. It, of course, means a great deal of mortising and routing, but, where power machines are available, does not consume a great amount of time. A chest built up as previously described with $\frac{1}{4}''$ strips glued on will give the same effect. A study of both drawings will make the construction clear to the average student.

CEDAR CHEST DESIGN NO. 7

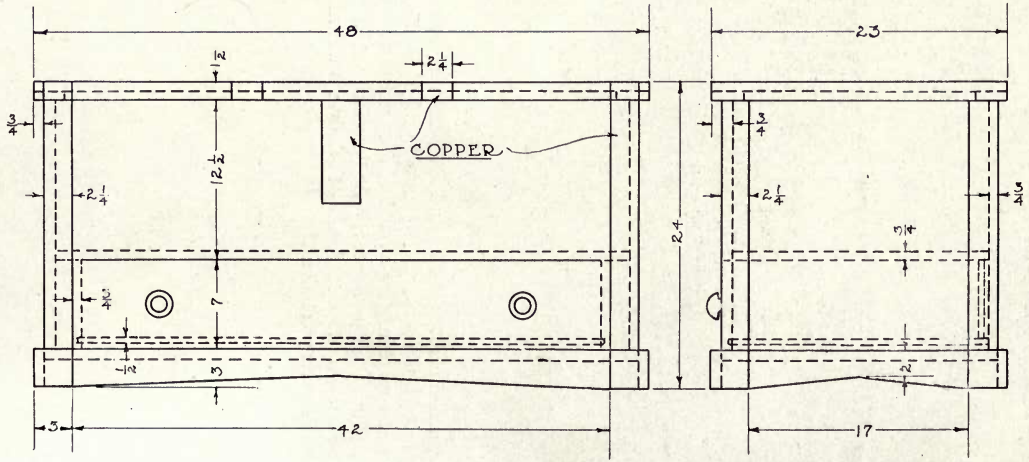


Fig. 27

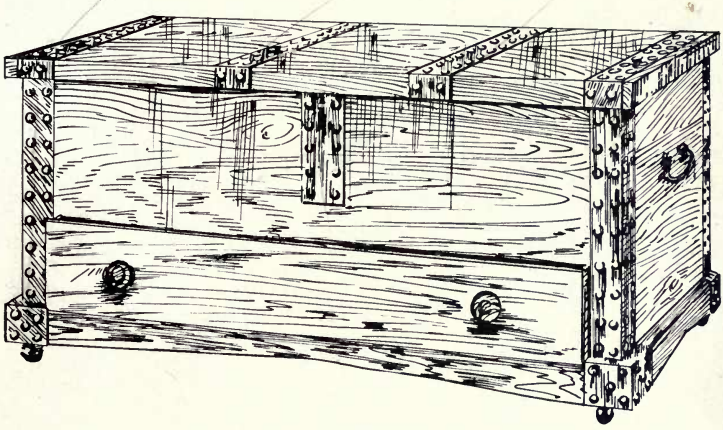
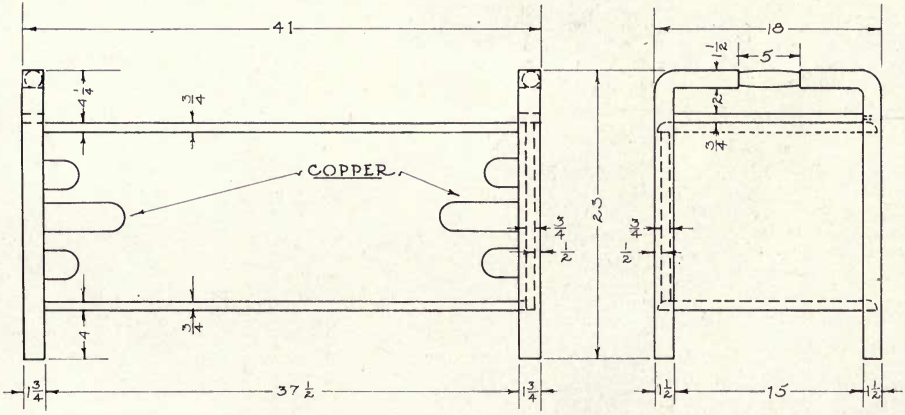


Fig. 28

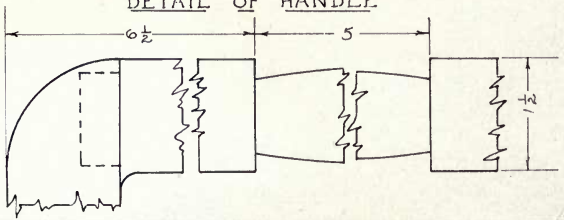
DESIGN NO. 7

Design No. 7, Figs. 27 and 28, is a rather odd design from the fact that it contains a drawer. It is built in the usual manner, but has two bottoms and an opening in the front for the drawer to slide into. It should be built of cedar thruout, but a slight saving can be effected if the lower bottom is of a cheaper wood or even a frame.

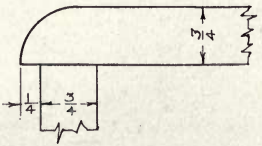
CEDAR CHEST DESIGN NO 8



DETAIL OF HANDLE



DETAIL OF TOP



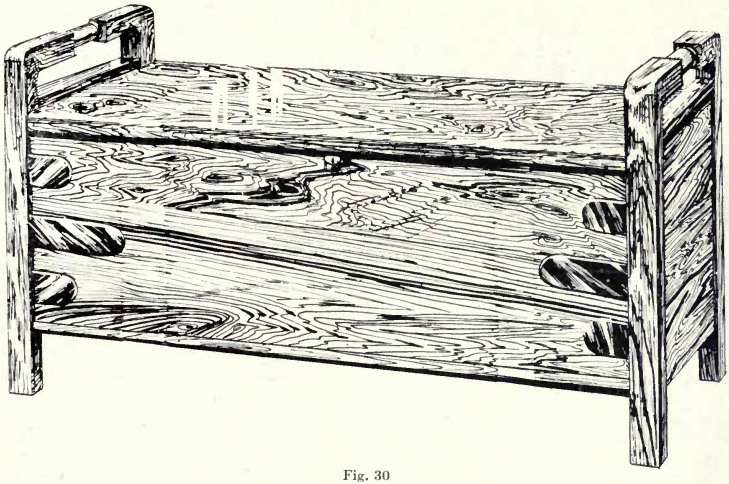


Fig. 30

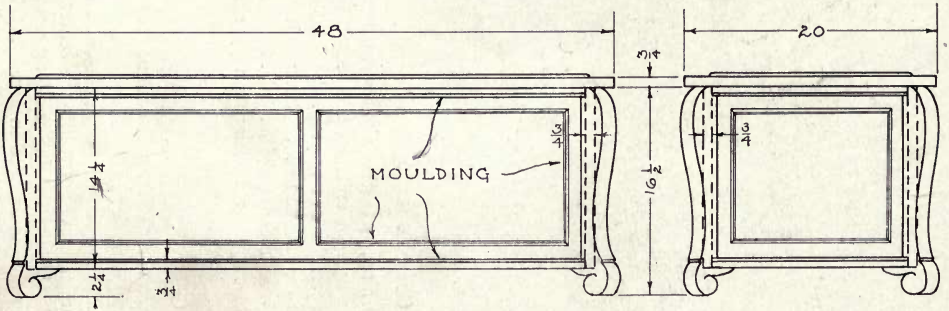
DESIGN NO. 8

This chest involves a little turning, but otherwise its construction is simple. A $\frac{3}{4}$″ piece is set into the upright end pieces of stock $1\frac{1}{2}$″x$1\frac{3}{4}$″, and another piece mortised in between them at the top. This latter piece has had a handle turned in its center, and two round tenons on its ends. These tenons are glued into holes bored in the uprights. Fig. 29 makes this construction clear. Aside from this, the construction is very similar to Design No. 5.

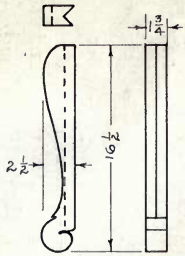
DESIGN NO. 9

At first glance, Fig. 32 presents a chest of difficult design, yet a careful understanding of its construction will show it to be quite simple. The box is built up with plain butt ends, and four corner legs are cut out according to the detail on Fig. 31. A right angle groove is cut into the center of each leg, and this fits over the corners of the chest. Glue and long screws from the inside of the box hold them in place, as detailed in Fig. 33. The little brackets shown in the perspective are doweled onto the legs after the latter have been fastened in place. At the top and bottom strips of small

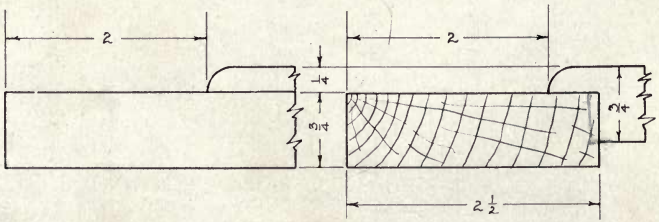
CEDAR CHEST DESIGN NO 9



DETAIL OF LEG



ALTERNATE METHODS OF BUILDING UP TOP



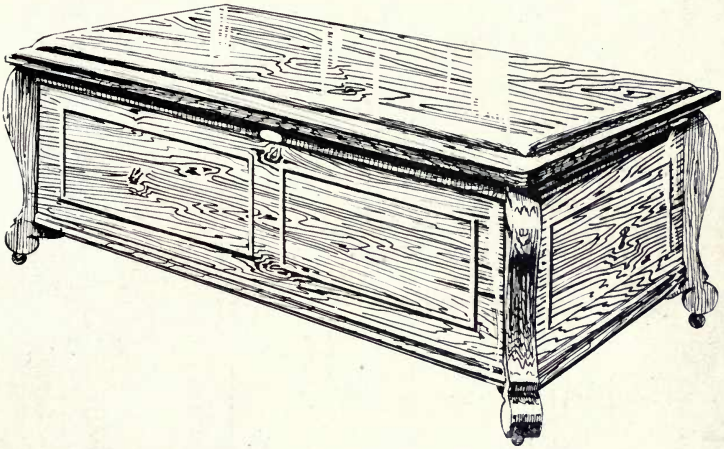


Fig. 32

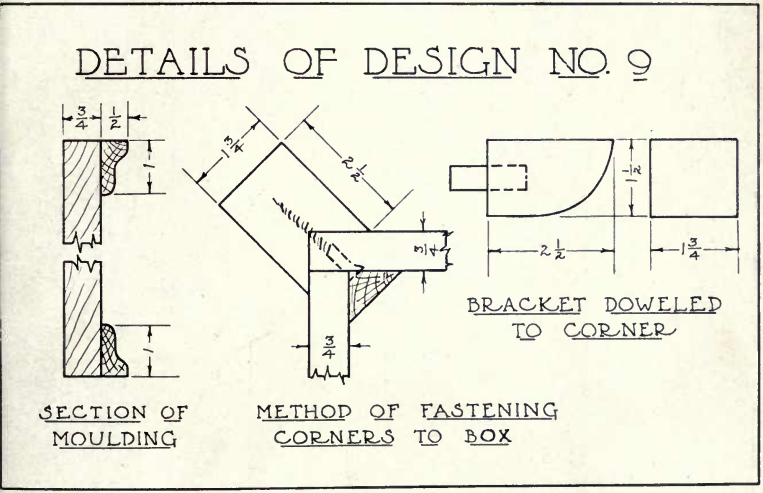
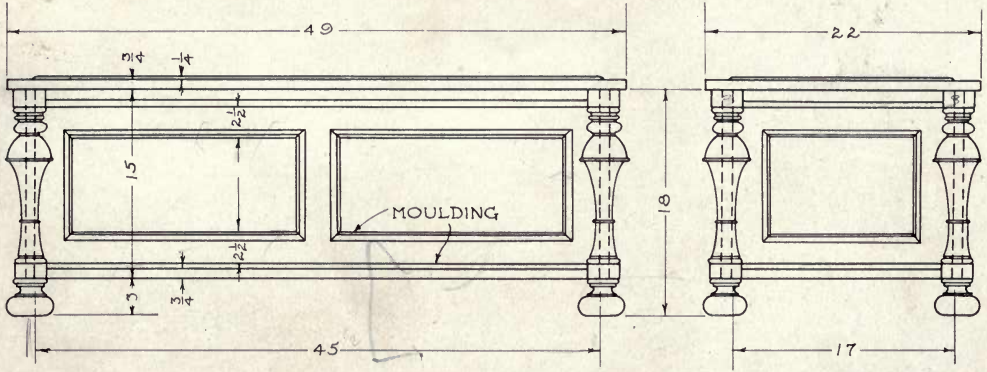
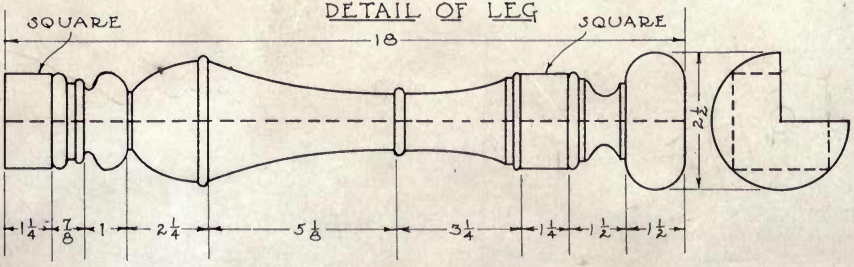

DETAILS OF DESIGN NO. 9
3/4
1/2
1
1
SECTION OF MOULDING
1 3/4
2 1/2
3/4
METHOD OF FASTENING CORNERS TO BOX
1/2
2 1/2
1 3/4
BRACKET DOWELED TO CORNER

Fig. 33

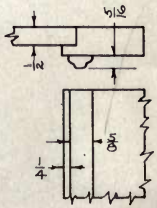
CEDAR CHEST DESIGN NO. 10



DETAIL OF LEG



DETAIL OF MOULDING



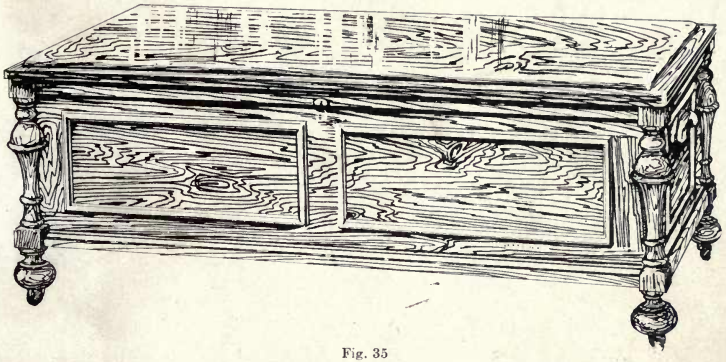


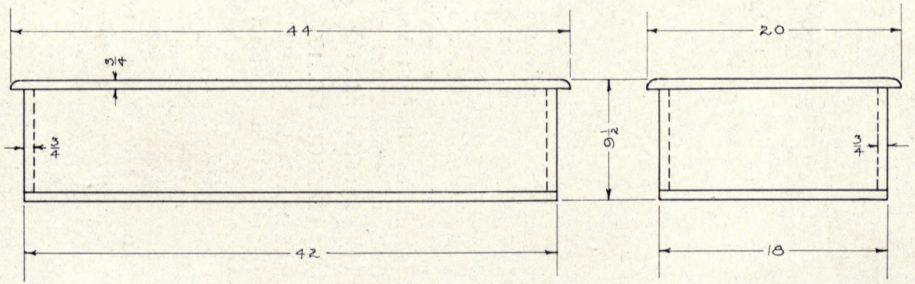
Fig. 35

moulding may be cut by hand, or special mill orders will secure it from the dealers. The panels are made of similar mouldings but these may be omitted if desired. The top shows a raised panel. There are two methods used to secure this effect. In the most simple, the $\frac{3}{4}''$ top is built up and another, thinner piece, glued over it. If the shop has a veneer press, this method is very easy. Of course there is excessive weight when this construction is used. The alternate method is to build up a frame with either mortised or mitered ends, and set the $\frac{3}{4}''$ top into this frame. It can be secured with nails and glue from the under side.

DESIGN NO. 10

Figs. 34 and 35 illustrate a chest of the William and Mary period style. It is built up as the others have been with plain butt joints, and over the corners, as with Design No. 9, the legs are fastened. These are turned on a wood lathe, a quarter of the pieces being cut out. They can be cut after the turning is finished, or before. The latter plan is the more simple, as a frame must be constructed to hold the legs while being sawed if they have been previously turned. If the section is removed before turning it is a good plan to make the two circular saw cuts thru the middle of the piece without cutting thru to the ends. This will permit good centers to be obtained, and it may prevent excessive chipping of the edges. The wood can be removed when the ends are cut off on the lathe, or they may be carefully chiseled out. The panel effect is secured with small mouldings mitered at their corners. These may be omitted, if desired, without spoiling the appearance of the chest.

UNDER-BED CHEST



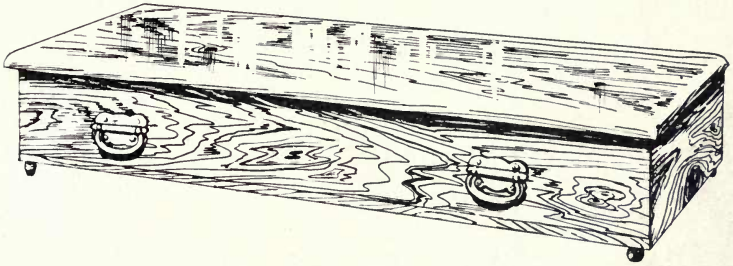


Fig. 37

UNDER-BED CHEST

As its title indicates, the chest design shown in Figs. 36 and 37 is meant to roll under the bed. It is of very simple construction, and most useful in small bedrooms and flats.

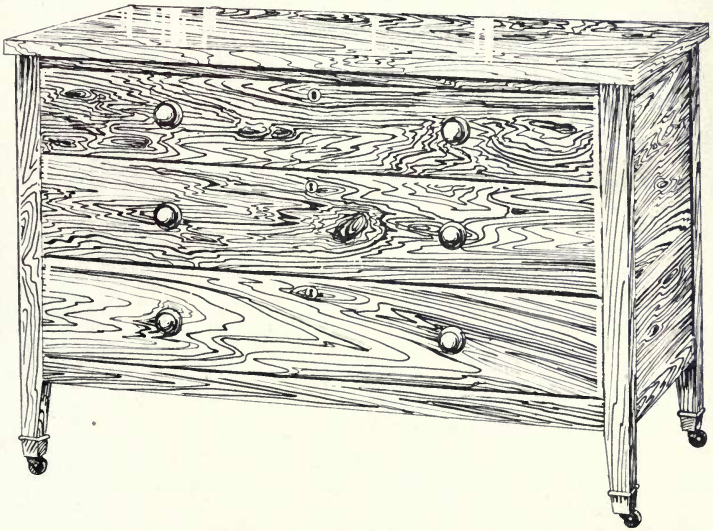
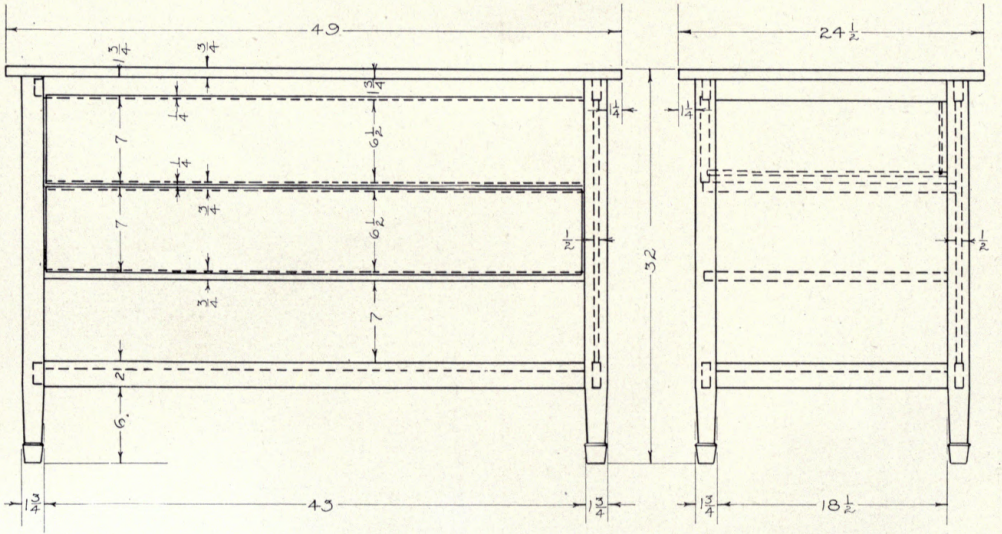


Fig. 38

CHEST OF DRAWERS



SEE DETAIL FOR DRAWER CONSTRUCTION

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SANTA BARBARA, CALIFORNIA
1813

CHEST OF DRAWERS

A chest of cedar drawers, Fig. 38, has so many advantages that little need be said concerning it. Its additional room and separate compartments commend it highly. Its construction is exactly like the usual cabinet construction, all parts, wherever possible, being mortised and tenoned together. The detail of the drawer construction, Fig. 40, shows the fronts to extend past the sides, the edges being rounded. This gives the chest a most pleasing appearance and renders it dust-proof. If desired, the upper section, instead of having a large drawer, can have a false drawer front, and a bottom put in. The top can then be hinged and a high chest with two drawers will result. Or the top drawer may be divided into two smaller drawers with good effect.

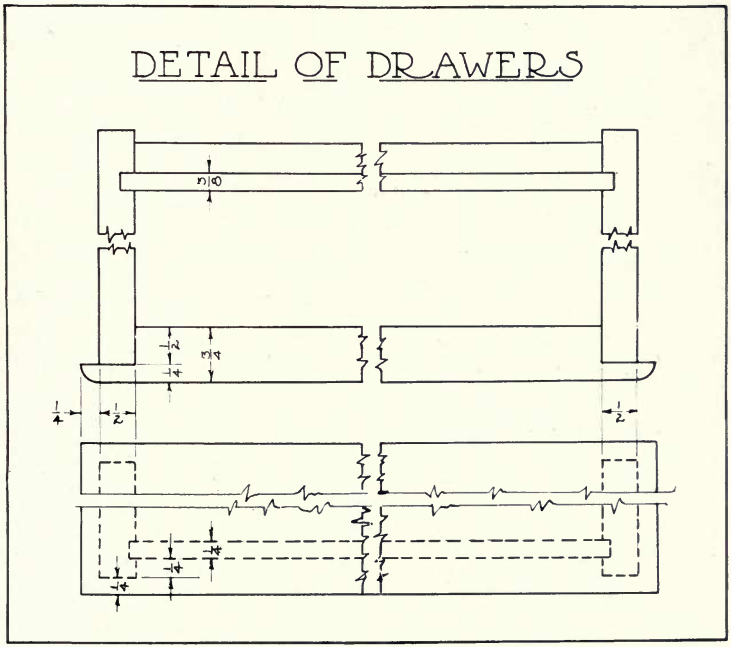


Fig. 40

Fig. 41. Suggestive Designs from Commercial Sources

SUGGESTIONS FOR DESIGN

Figs. 41 and 41a illustrate a few additional designs whose working drawings are not given. They may offer suggestions worth while when the builder is designing his own. The feet are especially suggestive.

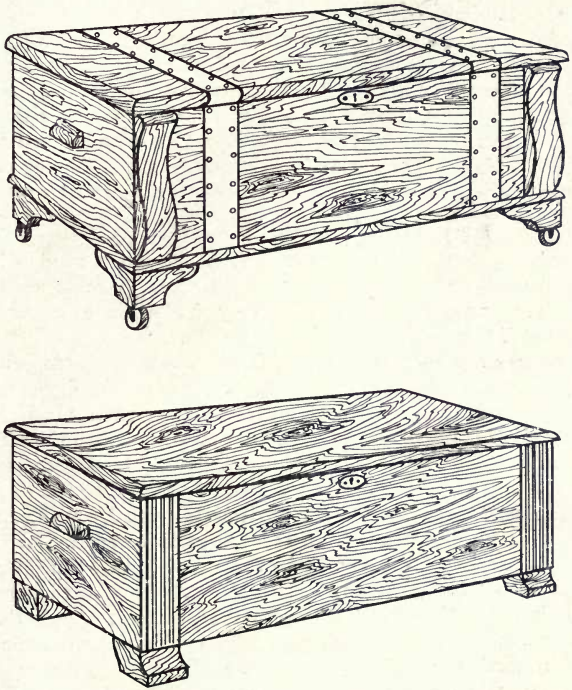


Fig. 41a. Suggestive Designs from Commercial Sources

CHAPTER V

The Finishing of Cedar

Red cedar, contrary to supposition, is not a hard wood to finish. Having a closed grain, it needs no filler, which greatly simplifies its finishing. The outside, and the inner side of the cover—to prevent warping—should be finished; *never the inside of the chest.*

PREPARING THE WOOD FOR FINISHING

The cedar chest should be prepared for finishing as any other piece of furniture is prepared. All glue and rough spots should be carefully scraped and sandpapered until the surface is entirely free from defects. If the wood in the chest has been purchased glued up and machine sandpapered, it will need a final sandpapering with No. 0 or No. 00 sandpaper. If worked down by hand, it will need a great deal of scraping with a *sharp* scraper, a preliminary rubbing with No. 1 sandpaper, and a final rubbing with No. 0, working *with the grain* in each case. Careful dusting preparatory to the application of the first coat of finish is very necessary.

FILLING ROUGH SPOTS

As red cedar contains a great many knots, planing the wood by hand—and occasionally by machine—causes rough spots to occur around the knots. If these rough spots are shallow, they can be scraped out and sandpapered, but if they are deep, they must be filled.

There are a number of methods of filling. The most simple—and least satisfactory—method is to fill them with "water putty," a dry crack filler purchased in powder form and mixed with water. When it has hardened it can be rubbed down with sandpaper and colored to match the surrounding wood. As this color will fade in time, this method is not recommended.

A better method is to fill them with a colored wood filler. Secure a small can of natural paste wood filler, a little rose pink dry stain, and some Van Dyke brown dry stain. Thin the filler with turpentine or benzine and add a quantity of the Van Dyke brown, well stirred in. Compare this color with that of the knots around which you are going to fill and add the rose pink until the correct shade of red is obtained. Apply this filler to the knots, and when perfectly dry, sandpaper down to an even surface.

A third method—much slower than the other two—is the application of successive coats of colored shellac. To the ordinary shellac, add a little Bismark brown dry stain until you get a color that will match, when dry, the wood surrounding the rought spots. Apply this and allow it to set.

Sandpaper down and apply successive coats, rubbing down evenly after each until a level surface is obtained. Repeated coats of thin shellac will look better and stick better than a few heavy coats.

COLORING THE WOOD

Some people object to the white streaks of sap wood contrasting so strongly with the red heart wood, while others are of the opinion that this contrast is one of the beauties of red cedar. The author is of the opinion that the white wood is not objectionable *if there is not too much of it.* Just what quantity to allow is again a matter of personal choice, so no hard and fast rule can be laid down.

To color the chest prepare an aniline dye stain of red and brown. Cover the entire piece with a thin coat, then go over the lighter parts and streaks with a stronger coat. If carefully done, this should even up the color.

If the maker does not mix his own stains, a red mahogany oil stain applied in the same manner will leave the same result. Thin the first coat out with benzine.

WAX FINISH

After filling and coloring, if the latter is desired, the kind of finish must be selected. The most simple is the wax but it is very seldom used—almost never by cedar chest manufacturers. But since it is often employed by students and home craftsmen it will be described.

Over the dry surface apply a coat of thin shellac, either white or orange. When this has thoroly dried, rub it down lightly with No. 00 sandpaper and apply a second coat. When this has set, repeat the rubbing, being very careful not to rub thru the coat, especially on the edges and corners. Brush on the third coat of shellac and rub it down with a little boiled linseed oil placd on the No. 00 sandpaper. This should leave a smooth, unpitted surface.

Finally, apply a coat of prepared floor wax and allow it to stand over night. Rub it briskly with a dry flannel cloth, bringing it to a good polish. If a still higher gloss is desired, put on a second coat of wax and allow it to stand about thirty minutes before rubbing off.

This finish can be renewed from time to time with fresh applications of wax, and has the advantage over the varnished surface of not showing scratches as readily.

VARNISH FINISH

For a varnish finish apply but two coats of shellac in the manner described above, and two coats of high grade rubbing varnish.

The temperature of the room in which the varnishing is accomplished should be 70 degrees F. or over, and perfectly uniform. The room should be free from dust, and kept free after the varnish has been applied.

Use an oval varnish brush, well dusted in the hand. Take up a brush full of the liquid as it comes from the can, and, starting from the center of the top, spread it out to the edges. Where it drips over, take up this surplus with the end of the brush. The sides should be varnished by working down from the top edge.

The inside of the cover should be supported so that the air can circulate around it, otherwise it would be very slow in drying.

Allow about five days for the varnish to thoroly dry in before rubbing it down. Then sprinkle powdered pumice stone over the surface, and rub it with a felt pad (about 4″ by 5″) moistened with water. Rub all surfaces while they are in a horizontal position if possible. Rub *lightly* and *evenly with the grain*, and be very sure that you do not go below the coat in any place—edges especially.

Wash the pumice stone off with water and rub dry with a clean cloth after which the second coat is applied in the same manner. Allow this coat about five days in which to dry when the polishing process can be started. Rub it down as before with pumice stone and water, then remove the fine scratches left by the pumice stone by rubbing in a similar manner with rotten stone and water. *Always rub with the grain if possible.* Next, moisten the hand with linseed oil and sprinkle a little rotten stone in it. Very lightly go over the entire surface with this combination, rubbing with the grain. When perfectly smooth, clean the surface with a very soft cloth saturated with clean oil, and rub dry with cotton batting.

To finish the polish, go over the entire surface with another soft pad of cotton batting saturated with some good furniture polish, or a thin mixture of linseed oil, turpentine, and sweet oil. This should produce an extremely brilliant and satisfactory finish if good materials have been used and care exercised in their application.

OIL FINISH

If an oil finish is desired go over the wood, after it has been filled and colored, with a coat of *hot linseed oil.* When thoroly dry, wipe off the "grease spots," if there are any, and give the wood a coat of shellac. This can be followed with a second coat of shellac, rubbed down with pumice stone and oil, or the varnish finish as described above can be applied over the second coat of shellac.

ENAMEL FINISH

There is a modern demand evinced for enameled and painted furniture, especially in some of the Period designs. To meet this demand,

cedar chest manufacturers have recently introduced chests enameled on the outside, and left natural on the inside, the designs being made to correspond with various periods—Adam and William and Mary being predominant.

Old ivory—a soft shade of cream—is the most popular finish, especially when decorated parts are striped with orange, while black enamel, striped with gold, is second best.

These finishes are applied in the conventional manner—the ivory enamel being under-coated with flat white.

On school-made chests these finishes are not to be recommended. In the first place, they are only temporary fads—pretty creations to catch the popular fancy that may be "old fashioned" next year. And secondly, there is no good reason for hiding the natural beauties of red cedar with enamels. Carefully selected wood, with its wonderful contrasts of sap and heart wood, certainly give color enough.

An Early American Chest, (XVII Century)

CHAPTER VI

Copper Trimmings

After the finish on the chest has thoroly dried, any copper trimmings desired can be applied, providing, of course, that the appearance of the chest will be improved by them. If good joints have been obtained on the corners, copper corners will help but little, but if the joints are open, well-designed corners will cover up the defects without detracting from the appearance of the chest. As a rule, handles of cedar, well executed, look better than metal pulls attached to the ends of the box, but if metal corners are employed the pulls should also be of the same. If a lock is attached, it will need an escutcheon, and hinge plates on the cover go well where the other metal trimmings are adapted.

Sixteen-gauge copper is the metal usually employed. Brass looks well, but it does not harmonize with the red cedar quite as attractively as copper.

The design should be first worked out on paper, and transferred to the metal by using carbon paper. Care should be exercised with the designing. A poor design looks worse than no design at all—copper bands with straight edges certainly give a pleasing appearance, as Fig. 29 shows. The student will do well to co-operate with the art teacher when designing his trimmings. The illustrations in this chapter offer suggestions for design, Fig. 42 showing escutcheons, Fig. 43 pulls, Fig. 44 hinge plates, and Fig. 45 corners. Altho these designs do not emphasize it, the same motif should be used in every case. For example, straight bands across the top should not be used with fancy-sawed corners. A reasonably plain hinge plate will not look well on a chest with very elaborate pulls and corners. Care should be given this designing that the different parts do not show incongruity.

ESCUTCHEONS

The escutcheon can be small and plain, or rather long and fancy. Fig. 42 illustrates both kinds. The design should be symmetrical about the vertical center line. The key hole size is dependent upon the size of the key furnished with the lock, and its distance from the upper edge is governed by the depth of the key hole in the lock.

After the design has been carefully traced on the metal, it should be cut out with a fine metal saw in a jeweler's saw frame. The edges can then

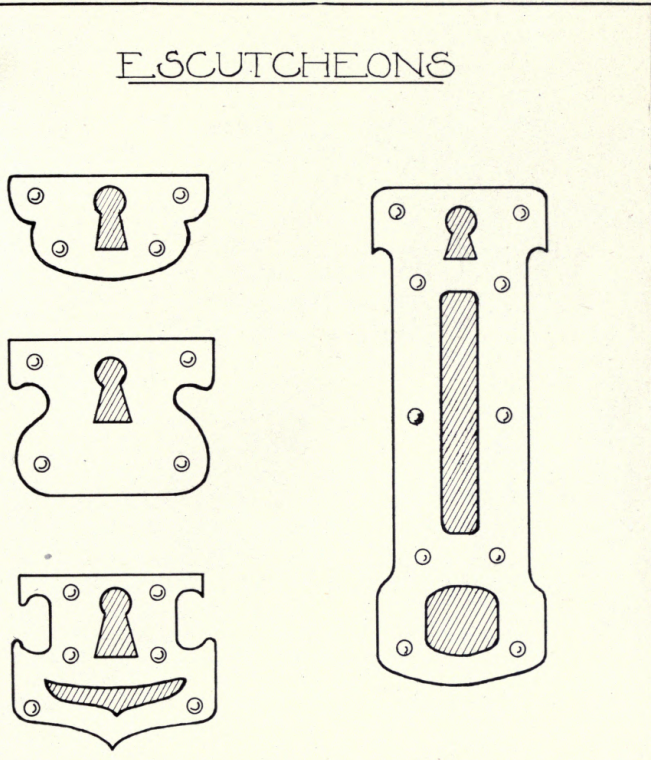

ESCUTCHEONS
SHADED PORTIONS REPRESENT
SAWED OUT PARTS
1 INCH

Fig. 42

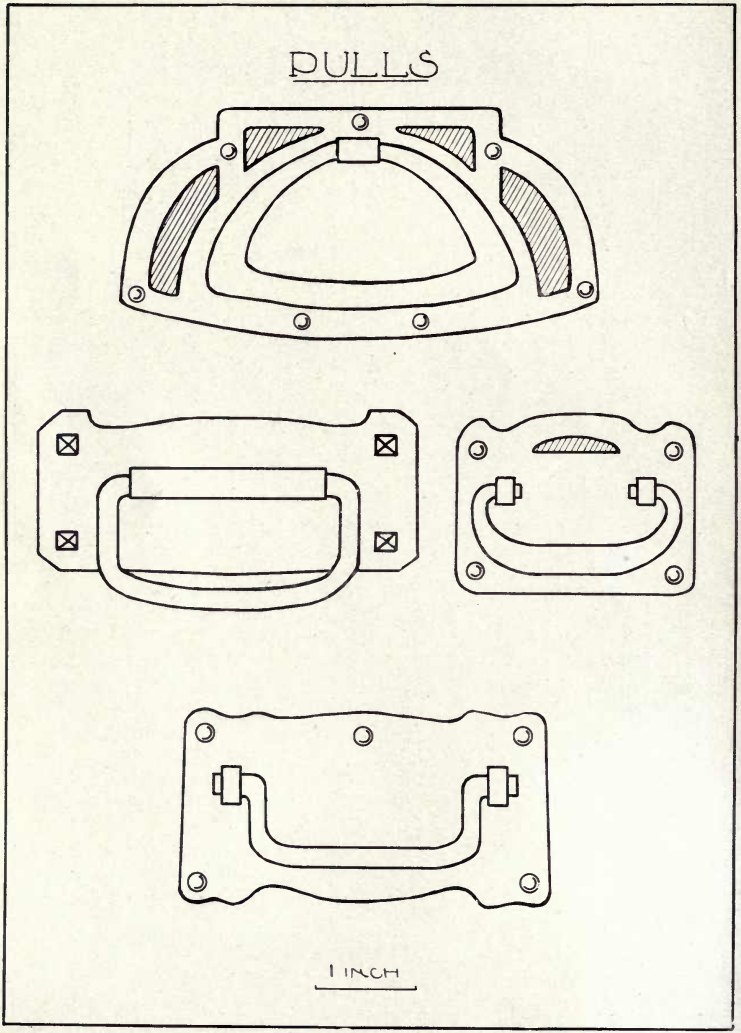


Fig. 43

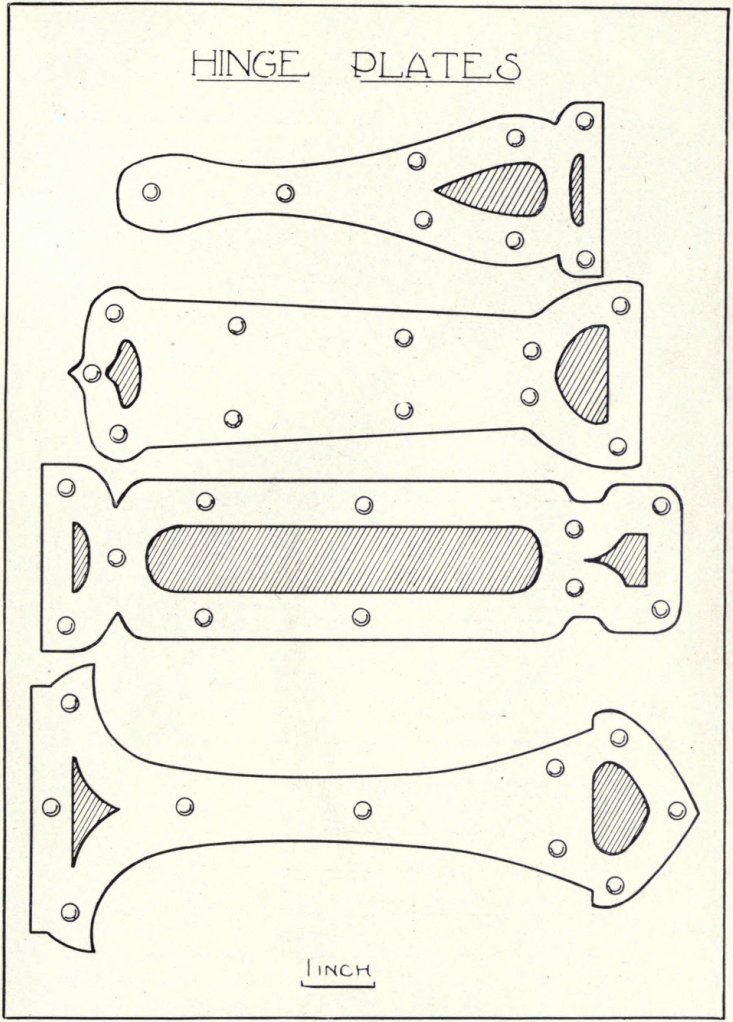


Fig. 44

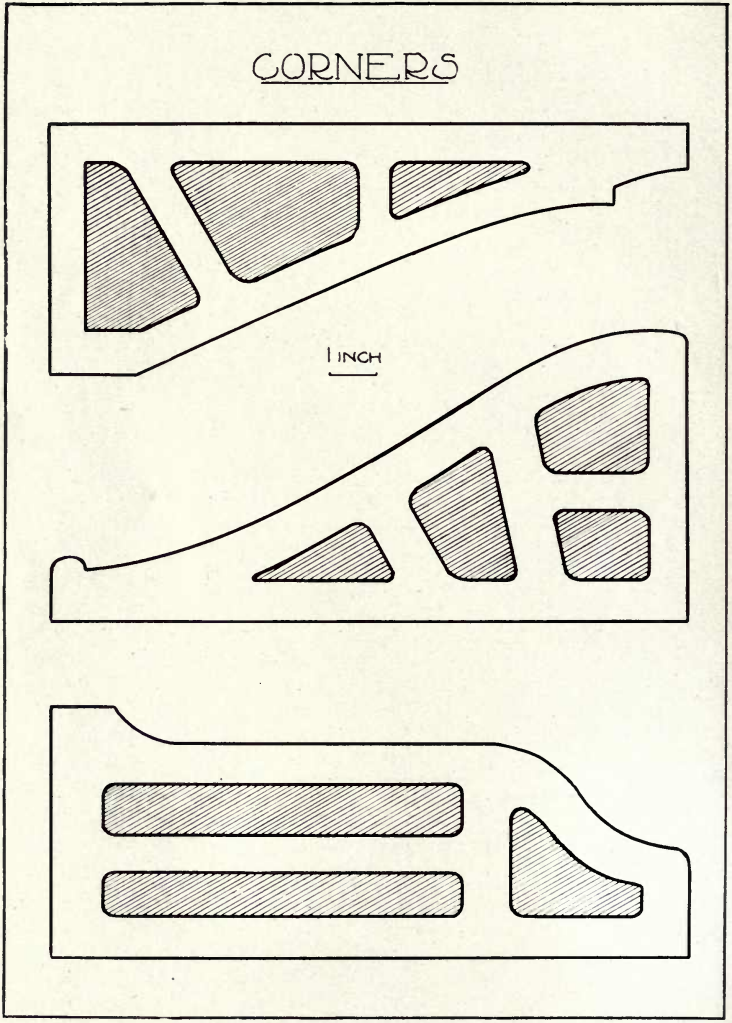


Fig. 45

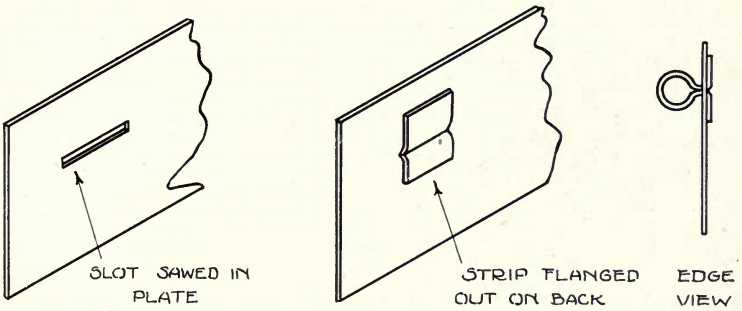


Fig. 46

be filed smooth. The inside cutting is accomplished by first drilling a small hole, then inserting the saw and re-fastening it in the frame.

Holes drilled for the tacks will complete the construction.

PULLS

The backs of the pulls are sawed out exactly like the escutcheon, the handle being the most difficult part to construct. On the even wire design, a piece of heavy round copper can be bent to shape. It is fastened thru a piece of thinner metal, which, in turn, is spread out after passing thru a slot sawed in the plate, Fig. 46. Those of uneven design, the first for

Fig. 47

example, can be sawed and filed from a piece of copper 1″ thick, or, if the school teaches molding, a wooden pattern the shape and size of the pull can be made, a mold taken from it, and a copper casting made in the mold. A little filing and polishing will put the metal pull in excellent shape. Where the wire is thicker in the middle, it can be hammered out or filed before bending, as in Fig. 47. The boring of the nail holes in the plate will complete the construction.

Fig. 48. Chest Decorated with Decalcomania Transfers

HINGE PLATES

Hinge plates are used on the cover to give the chest a more massive appearance. They extend to the back edge, or are bent over it. After the design has been traced on the metal, they are sawed, filed, and the nail holes drilled as before.

CORNERS

Corners are made like hinge plates with the addition of a right angle bend in the middle. This bending is accomplished by placing the metal between two hardwood pieces screwed up in a vise, and driving the upper half over with a mallet. In some instances, Fig. 19 is an example, the corner does not go around the end, a flat plate covering the end grain being fastened on the front only.

FINISH

The metal trimmings should be rubbed very briskly with fine steel wool, and polished with water and pumice stone. They will keep this polish if coated with banana oil or some other good lacquer. This finish should be applied before the trimmings are fastened on the chest.

NAILS

Copper nails with various size heads can be obtained, or brass headed tacks copper coated can be used in their stead. The copper plating can be done by any plating concern, and at a very small cost.

DECALCOMANIA TRANSFERS

A line of chests has recently appeared on the market with decorations that appear to be hand painted. Fig. 48 gives an example. This form of

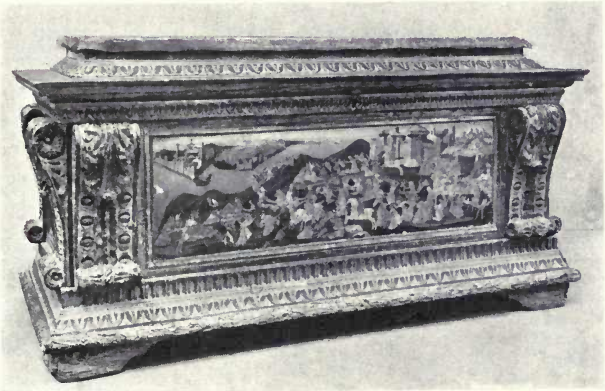
decoration results from the using of Decalcomania transfers, and, since it is very attractive and easily applied, deserves notice in this chapter.

The transfers are applied in colors to the Decalcomania paper, in which condition they reach the consumer. The face of the transfer is sized with a thin coat of varnish, the paper is placed in position on the chest, and is then soaked off, very much as the small boy soaks off the old-fashioned transfer pictures from his hand or arm. The operation consumes but very little time and when properly done, the decoration is as much a part of the piece as the finish itself.

It is applied over the final finish, or it can be put on before the last coat of varnish is placed.

Many excellent designs are available, especially in marquetry and pearl inlay where the work has been reproduced so carefully as to challenge detection. A chest decorated with a fine band of inlay lines of black and holly presents a wonderfully attractive appearance.

Decalcomania transfers can be obtained only from the manufacturers, The Meyercord Company, Inc., Chicago.



An Italian Chest of the Fifteenth Century (Made in Florence about 1475)

CHAPTER VII

Matting Boxes

Fig. 49 is from a photograph of a matting box—a form of chest construction not devoid of popularity, as its neat appearance and simple construction make it worthy of considerable favor.

Most matting boxes are made from wood other than cedar—cypress, redwood, etc.—most any stock that can be secured in wide pieces—thus doing away with gluing up. The pieces are simply nailed or screwed together, corner strips glued in, and the matting applied. Such simple construction makes this a favorable project for grammar grade students.

HOW TO MAKE A MATTING BOX

California redwood is recommended, as it is light, straight-grained, and does not warp easily. Dimensions can be secured from the working drawings of the cedar chests given in the previous chapters.

The flat surfaces will need little planing by hand since they will be entirely covered on the outside. The edges should be smoothly finished, especially the upper edges, and the under side of the top should be planed and sandpapered.

Fig. 49

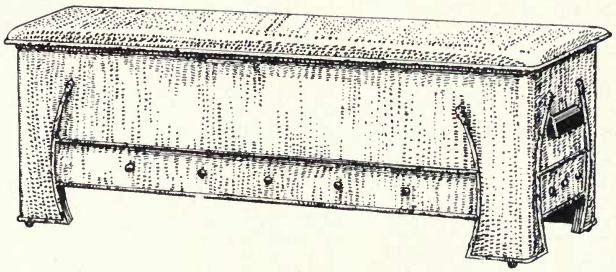


Fig. 50

Cut the sides and ends to the desired shape, Figs. 50 and 51 offer excellent suggestions, and square the ends of all four pieces. Nail or screw the boards together, and glue in triangular corner strips on the inside.

Nail the bottom in thru the sides and ends, making the nail holes in the ends about three times as wide as the nails to allow for expansion and contraction, and give the sides a rather loose fit for the same reason.

Fit the top carefully and round its upper edges. If the board is not flat or glued-up from narrow pieces, it may be well to glue and nail strips on its under side to straighten it and prevent warping, as Fig. 52 illustrates.

Shellac over the outside and inside of all pieces with at least two coats of shellac, sandpapering the second on the inside. This is also done to prevent warping.

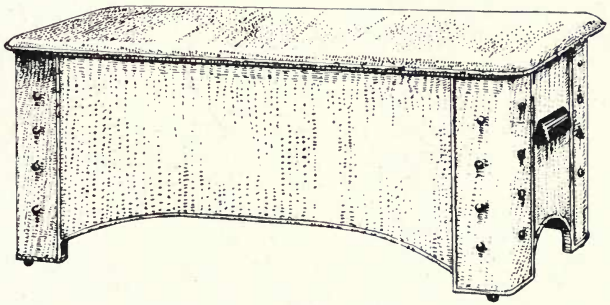


Fig. 51

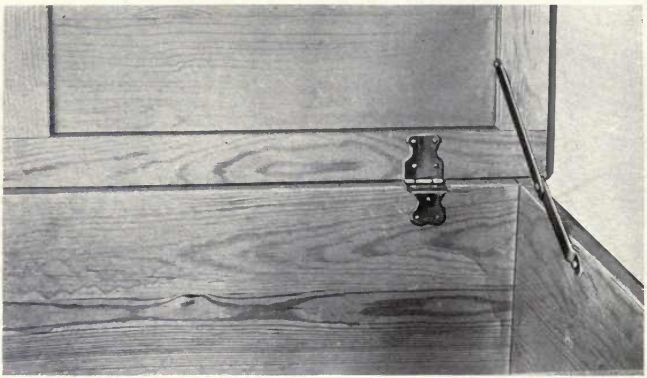


Fig. 52

PUTTING ON THE MATTING

The natural colored floor matting without decoration of any kind is to be preferred. Trim off its thick edges, and cut the pieces carefully to fit the surfaces, planning on the seams coming where they will be covered with the strips of cane.

Allow these pieces to soak in warm water for two or three hours, then tack them to their respective surfaces. Use ordinary carpet tacks with large heads, or matting staples. Stretch the matting very tight over the surface as the tacking proceeds, and when the water dries out a perfect fit will be assured.

COVERING THE SEAMS AND EDGES

Split bamboo makes the best covering for the seams and edges, as it blends so well with the matting. Small fish-poles may be secured, soaked in hot water, and carefully split with a sharp knife on a diameter, as each section should be semi-circular. Split bamboo porch screens, at one time so popular, can be taken apart and used, or strips may be purchased from a manufacturer of split bamboo fish-poles thru some sporting goods dealer.

Cut the strips the exact lengths desired, being very careful to make good joints, drill small holes where the nails will come, and fasten with round-head brads or brass escutcheon pins. Curves that require much bending can be soaked in hot water until pliable before placing.

If a little decoration is desired on the bamboo, hold it over a flame at intervals, scorching the surface brown. Dust this off and shellac the strips before attaching them.

If it is impossible to secure bamboo of any kind, small strips of any wood stained or white enameled will serve very well.

Place the hinges and chain, and the box is complete.

MAKING THE BOX MOTH-PROOF

If a cedar chest has been constructed and poorly finished, a covering of matting will greatly improve its appearance, and without imparing its moth-proof qualities if it is not finished on the inside.

If an ordinary matting box has been made, it can be rendered moth-proof by putting in a bottom of red cedar, or covering the bottom with cedar shavings, also mixing shavings in with the contents of the box when storing them.

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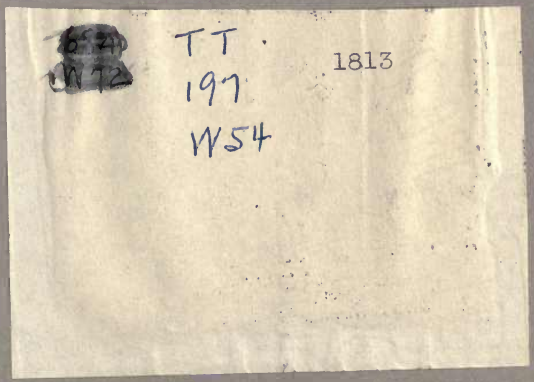
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